

CPC**COOPERATIVE PATENT CLASSIFICATION****E01B**

**PERMANENT WAY
PERMANENT-WAY TOOLS
MACHINES FOR MAKING RAILWAYS OF ALL KINDS** ([derailing or rerailling blocks on track, track brakes or retarders B61K](#))

Guide heading: **Structure of the permanent way for railways or tramways**

E01B 1/00

**Ballastway
Other means for supporting the sleepers or the track
Drainage of the ballastway** ([draining by trenches, culverts, or conduits E01F 5/00](#))

- E01B 1/001 . { [Track with ballast](#) }
- E01B 1/002 . { [Ballastless track, e.g. concrete slab trackway, or with asphalt layers](#) }
- E01B 1/004 .. { [with prefabricated elements embedded in fresh concrete or asphalt](#) }
- E01B 1/005 .. { [with sleeper shoes](#) }
- E01B 1/007 .. { [with interlocking means to withstand horizontal forces](#) }
- E01B 1/008 . { [Drainage of track](#) }

E01B 2/00

General structure of permanent way ([railway networks B61B 1/00](#) ; foundations for pavings [E01C 3/00](#) ; foundations in general [E02D](#))

- E01B 2/003 . { [Arrangement of tracks on bridges or in tunnels](#) }
- E01B 2/006 . { [Deep foundation of tracks](#) }

E01B 3/00

Transverse or longitudinal sleepers ([for switches or crossings E01B 7/22](#))
Other means resting directly on the ballastway for supporting rails

- E01B 3/02 . made from wood ([drying or impregnating B27K](#))
- E01B 3/04 .. Means for preventing cleaving
- E01B 3/06 ... Anti-cracking dogs
- E01B 3/08 ... Straps [E01D 3/06](#) or bands for hooping or encircling sleepers ([apparatus for hooping wooden railway sleepers on the spot E01B 31/28](#))
- E01B 3/10 .. Composite sleepers
- E01B 3/12 .. Longitudinal sleepers
Longitudinal sleepers integral or combined with tie-rods
Combined longitudinal and transverse sleepers
- E01B 3/14 .. Slabs
Blocks
Fastening tie-rods to them
- E01B 3/16 . made from steel

- E01B 3/18 . . Composite sleepers
- E01B 3/20 . . Sleeper construction for special purposes, e.g. with openings for ballast working ([sleepers for shiftable track for heavy loads E01B 23/12](#))
- E01B 3/22 . . Longitudinal sleepers
Longitudinal sleepers integral or combined with tie-rods
Combined longitudinal and transverse sleepers
- E01B 3/24 . . Slabs
Blocks
Pot sleepers
Fastening tie-rods to them
- E01B 3/26 . . combined with inserts of wood artificial stone or other material
- E01B 3/28 . made from concrete or from natural or artificial stone ([manufacture B28](#))
- E01B 3/30 . . Hollow sleepers
- E01B 3/32 . . with armouring or reinforcement ([hollow sleepers E01B 3/30](#))
- E01B 3/34 . . . with pre-tensioned armouring or reinforcement ([pre-tensioned armouring or reinforcing elements E04C 5/00](#))
- E01B 3/36 . . Composite sleepers
- E01B 3/38 . . Longitudinal sleepers
Longitudinal sleepers integral or combined with tie-rods
Combined longitudinal and transverse sleepers
Layers of concrete supporting both rails
- E01B 3/40 . . Slabs
Blocks
Pot sleepers
Fastening tie-rods to them
- E01B 3/42 . . combined with inserts of wood or other material
- E01B 3/44 . made from other materials only if the material is essential
- E01B 3/46 . made from different materials ([E01B 3/26](#) , [E01B 3/42](#) take precedence)
- E01B 3/48 . Distance keepers or tie-rods for sleepers
- E01B 5/00** **Rails**
Guard rails ([manufacture of rails B21B](#))
Distance-keeping means for them
- E01B 5/02 . Rails
- E01B 5/04 . . Grooved rails
- E01B 5/06 . . Reversible or invertible rails
- E01B 5/08 . . Composite rails
Compound rails with dismountable or non-dismountable parts
- E01B 5/10 . . . Composite grooved rails
Inserts for grooved rails
- E01B 5/12 . . Rails with a foot serving as a sleeper
- E01B 5/14 . . Rails for special parts of the track, e.g. for curves
- E01B 5/16 . Distance keepers

- E01B 5/18
 - . Guard rails
 - Connecting, fastening or adjusting means therefor

- E01B 7/00**
 - Switches**
 - Crossings ([operating mechanisms B61L](#))**

- E01B 7/02
 - . Tongues
 - Associated constructions
- E01B 7/04
 - .. Constructions with tongues turning about a vertical pivot at the end
- E01B 7/06
 - .. Constructions with flexible tongues or flexible fishplates
- E01B 7/08
 - .. Other constructions of tongues, e.g. tilting about an axis parallel to the rail, movable tongue blocks or rails

- E01B 7/10
 - . Frogs
- E01B 7/12
 - .. Fixed frogs made of one part or composite
- E01B 7/14
 - .. with movable parts
- E01B 7/16
 - .. Jump-over frogs

- E01B 7/18
 - . Combinations of switches and crossings

- E01B 7/20
 - . Safety means for switches, e.g. switch point protectors, auxiliary or guiding rail members

- E01B 7/22
 - . Special sleepers for switches or crossings
 - Fastening means therefor

- E01B 7/24
 - . Heating of switches

- E01B 7/26
 - . Lubricating of switches ([lubricating of rails B61K 3/00](#))

- E01B 7/28
 - . Crossings
- E01B 7/30
 - .. Jump-over crossings

- E01B 9/00**
 - Fastening rails on sleepers, or the like ([fastening rails to bridges E01D 19/12](#))**

- E01B 9/02
 - . Fastening rails, tie-plates, or chairs directly on sleepers or foundations
 - Means therefor
- E01B 9/04
 - .. Fastening on wooden or concrete sleepers or on masonry without clamp members
- E01B 9/06
 - ... Railways spikes ([nails in general F16B](#))
- E01B 9/08
 - Elastic spikes
- E01B 9/10
 - ... Screws or bolts for sleepers ([screws or bolts in general F16B](#))
- E01B 9/12
 - ... Retaining or locking devices for spikes or screws
- E01B 9/14
 - ... Plugs, sleeves, thread linings, or other inserts for holes in sleepers ([inserting plugs or sleeves E01B 31/26](#))
- E01B 9/16
 - for wooden sleepers
- E01B 9/18
 - for concrete sleepers
- E01B 9/20
 - ... by keys

- E01B 9/22 .. Fastening on steel sleepers without clamp members
- E01B 9/24 ... by keys
- E01B 9/26 ... Welded fastenings
- E01B 9/28 .. Fastening on wooden or concrete sleepers or on masonry with clamp members
- E01B 9/30 ... by resilient steel clips
- E01B 9/303 { the clip being a shaped bar }
- E01B 9/306 { the clip being a shaped plate }
- E01B 9/32 .. Fastening on steel sleepers with clamp members
- E01B 9/34 ... by resilient steel clips
- E01B 9/36 .. Metal sole-plates for rails which rails are directly fastened to sleepers

- E01B 9/38 . Indirect fastening of rails by using tie-plates or chairs
Fastening of rails on the tie-plates or in the chairs
- E01B 9/40 .. Tie-plates for flat-bottom rails ([manufacture B21](#))
- E01B 9/42 ... of two or more parts
- E01B 9/44 .. Fastening the rail on the tie-plate
- E01B 9/46 ... by clamps
- E01B 9/48 by resilient steel clips
- E01B 9/483 { the clip being a shaped bar }
- E01B 9/486 { the clip being a shaped plate }
- E01B 9/50 ... by keys
- E01B 9/52 by resilient keys
- E01B 9/54 .. Rail chairs
- E01B 9/56 ... for rails with two or more treads
- E01B 9/58 .. Fastening the rail in the chair

- E01B 9/60 . Rail fastenings making use of clamps or braces supporting the side of the rail
- E01B 9/62 . Rail fastenings incorporating resilient supports
- E01B 9/64 . Rail fastenings gripping or encircling the sleeper
- E01B 9/66 . Rail fastenings allowing the adjustment of the position of the rails, so far as not included in the preceding groups
- E01B 9/68 . Pads or the like, e.g. of wood, rubber, placed under the rail, tie-plate, or chair

NOTE

If the subject to be classified has more than one characteristic, classification is made in group [E01B 9/68](#) and indexing codes for the different characteristics are given

- E01B 9/681 .. { characterised by the material }
- E01B 9/683 ... { layered or composite }
- E01B 9/685 .. { characterised by their shape }

E01B 9/686 . . . { with textured surface }
 E01B 9/688 . . . { with internal cavities }

E01B 11/00 Rail joints ([electrical connection of the rail B60M 5/00](#))

- E01B 11/02 . Dismountable rail joints
- E01B 11/04 . . Flat fishplates
- E01B 11/06 . . . with keys or pins
- E01B 11/08 . . Angle fishplates
- E01B 11/10 . . Fishplates with parts supporting or surrounding the rail foot
- E01B 11/12 . . Fishplates engaging only the rail foot
- E01B 11/14 . . Rail foot flange clips in one piece
- E01B 11/16 . . Fishplates for joining rails of different sections
- E01B 11/18 . . Fishplates for temporarily repairing broken rails
- E01B 11/20 . . with gap-bridging
- E01B 11/22 . . . by parts of the rails
- E01B 11/24 with oblique or overlapping rail ends
- E01B 11/26 with interlocking rail ends
- E01B 11/28 . . . by parts of the joining members
- E01B 11/30 Fishplates with integral tread parts lying in the cross-section of the rail head
- E01B 11/32 . . . by separate parts, Inserts bridging both rail heads
- E01B 11/34 Auxiliary rail beside gap
- E01B 11/36 . . Fastening means for fishplates
- E01B 11/38 . . . Loking arrangements for fastening means ([locking means for nuts or bolts in general F16B](#))
- E01B 11/40 . . Dismountable rail joints combined with welded parts
- E01B 11/42 . Joint constructions for relatively movable rails, e.g. rails on turntables, traversers, or swing bridges
- E01B 11/44 . Non-dismountable rail joints
 Welded joints ([welding methods B23K](#))
- E01B 11/46 . . General methods for making gapless tracks
- E01B 11/48 . . Joints made by flame welding
- E01B 11/50 . . Joints made by electric welding
- E01B 11/52 . . Joints made by alumino-thermal welding
- E01B 11/54 . Electrically-insulating rail joints
- E01B 11/56 . Special arrangements for supporting rail ends ([foot supports E01B 11/08 to E01B 11/14](#))
- E01B 11/58 . . Bridge plates
- E01B 11/60 . . . with wedges
- E01B 11/62 . . Bridge chairs ([chairs E01B 9/54 to E01B 9/58](#))

- E01B 13/00** **Arrangements preventing shifting of the track**
- E01B 13/02 . Rail anchors
- E01B 15/00** **Guards for preventing a person`s foot being trapped in grooved rails**
- E01B 17/00** **Cattle guards connected to the permanent way (grids in general for preventing cattle from straying [A01K 3/00](#))**
- E01B 19/00** **Protection of permanent way against development of dust or against the effect of wind, sun, frost, or corrosion**
Means to reduce development of noise (snow fences [E01F 7/02](#) , snow-ploughs [E01H 8/02](#) , watering [E01H 11/00](#))
- E01B 19/003 . { Means for reducing the development or propagation of noise }
- E01B 19/006 . { Means for protecting the underground against spillage }
- E01B 21/00** **Track superstructure adapted for tramways in paved streets (paving [E01C 9/04](#) , [E01C 9/06](#))**
- E01B 21/02 . Special supporting means
 Draining of rails
- E01B 21/04 . Special fastenings, joint constructions, or tie-rods
- E01B 23/00** **Easily dismountable or movable tracks, e.g. temporary railways**
Details specially adapted therefor
- E01B 23/02 . Tracks for light railways, e.g. for field, colliery, or mine use
- E01B 23/04 . . Fastening or joining means
- E01B 23/06 . . Switches ([turntables B60S](#) , [B61J](#))
 Portable switches
 Turnouts
- E01B 23/08 . Temporary tracks for use while repairing tramways
- E01B 23/10 . Shiftable tracks for heavy loads, e.g. carrying excavators
- E01B 23/12 . . Sleepers
- E01B 23/14 . . Fastening or joining means ([fastening of rails by keys E01B 9/24](#))
- E01B 23/16 . . Switches
- E01B 25/00** **Tracks for special kinds of railways (systems [B61B](#) ; wheel tracks on roads [E01C 9/02](#))**
- E01B 25/02 . Tracks for rack railways

- E01B 25/04 . . Rack rails
Supports or connections for rack rails
- E01B 25/06 . . Switches
Frogs
Crossings
- E01B 25/08 . Tracks for mono-rails with centre of gravity of vehicle above the load-bearing rail
- E01B 25/10 . . Mono-rails
Auxiliary balancing rails
Supports or connections for rails
- E01B 25/12 . . Switches
Crossings
- E01B 25/14 . Tracks for cable-drawn railway vehicles
- E01B 25/15 . . Switches
Crossings
- E01B 25/16 . Tracks for aerial rope railways with a stationary rope
- E01B 25/18 . . Ropers
Supports, fastening or straining means for ropes (ropes in general [D07B](#) ; masts [E04H 12/00](#) ; ropes sockets [F16G](#))
- E01B 25/20 . . Switches
Crossings
- E01B 25/22 . Tracks for railways with the vehicle suspended from rigid supporting rails
- E01B 25/24 . . Supporting rails
Auxiliary balancing rails
Supports or connections for rails
- E01B 25/26 . . Switches
Crossings
- E01B 25/28 . Rail tracks for guiding vehicles when running on road or similar surface (wheel tracks on roads [E01C 9/02](#))
- E01B 25/30 . Tracks for magnetic suspension or levitation vehicles
- E01B 25/305 . . { Rails or supporting constructions }
- E01B 25/32 . . Stators, guide rails or slide rails
- E01B 25/34 . . Switches
Frogs
Crossings
- E01B 26/00 Tracks or track components not covered by any one of the preceding groups**
- E01B 26/005 . { Means for fixing posts, barriers, fences or the like to rails }
- Guide heading:** **Making, maintaining, renewing, or taking-up the ballastway or the track**
Tools or machines specially designed therefor (derauling or rerailing of machines
[B61K 5/00](#) ; removal of foreign matter from the permanent way, vegetation control
applying liquids [E01H](#))

- E01B 27/00** **Placing, renewing, working, cleaning, or taking-up the ballast, with or without concurrent work on the track**
Devices therefor
Packing sleepers
- E01B 27/02** . Placing the ballast
 Making ballastway
 Redistributing ballasting material
 Machines or devices therefor
 Levelling means
- E01B 27/021** .. { by devices moving underneath the track, e.g. ballast sleighs }
- E01B 27/022** .. { by devices moving on the track with or without spreading or levelling }
- E01B 27/023** .. { Spreading, levelling or redistributing ballast already placed }
- E01B 27/025** ... { by means of non-driven tools }
- E01B 27/026** ... { by means of driven tools, e.g. rotating brooms or digging devices }
- E01B 27/027** .. { Loosening ballasting material }
- E01B 27/028** .. { Compacting ballasting material; Performing ballast cores or seats for sleepers }
- E01B 27/04** . Removing the ballast
 Machines therefor, whether or not additionally adapted for taking-up ballast ([E01B 27/06](#) , [E01B 27/12](#) takes precedence; redistributing ballasting material [E01B 27/02](#))
- E01B 27/06** . Renewing or cleaning the ballast in situ, with or without concurrent work on the track
- E01B 27/08** .. the track having been taken-up ([E01B 27/11](#) takes precedence)
- E01B 27/10** .. without taking-up track ([E01B 27/11](#) takes precedence)
- E01B 27/102** ... { Removing unwanted material without removing the ballast }
- E01B 27/105** ... { the track having been lifted }
- E01B 27/107** ... { along between the tracks only }
- E01B 27/11** .. combined with concurrent renewal of track components
- E01B 27/12** . Packing sleepers, with or without concurrent work on the track
 Compacting track-carrying ballast
- E01B 27/13** .. Packing sleepers, with or without concurrent work on the track ([performing ballast cores or seats for sleepers E01B 27/02](#))
- E01B 27/14** ... Manual tools or hand-held power tools therefor
- E01B 27/16** ... Sleeper-tamping machines
- E01B 27/17** combined with means for lifting, levelling or slewing the track
- E01B 27/18** by introducing additional fresh material under the sleepers, e.g. by the measured-shovel method, by the blowing method
- E01B 27/20** .. Compacting the material of the track-carrying ballastway, e.g. by vibrating the track, by surface vibrators ([of trackless ballastway E01B 27/02](#) ; [for packing sleepers E01B 27/12](#))
- E01B 29/00** **Laying, rebuilding, or taking-up tracks**
Tools or machines therefor ([E01B 27/00](#) , [E01B 31/00](#) take precedence)
- E01B 29/005** . { Making of concrete parts of the track in situ }

- E01B 29/02 . Transporting, laying, removing, or renewing lengths of assembled track, assembled switches, or assembled crossings ([E01B 29/04 takes precedence](#))
- E01B 29/04 . Lifting or levelling of tracks ([lifting devices in general B66F](#))
- E01B 29/05 . Transporting, laying, removing, or renewing both rails and sleepers ([as assembled units E01B 29/02](#))
- E01B 29/06 . Transporting, laying, removing or renewing sleepers ([E01B 29/05 takes precedence; carrying devices B65G 7/12](#))
- E01B 29/09 . . under, or from under, installed rails
- E01B 29/10 . . . for inserting or removing sleepers
- E01B 29/11 Removal involving destruction of the sleeper, e.g. the sectioning thereof
- E01B 29/13 . . . for moving sleepers in a direction parallel to the rails, e.g. for spacing or aligning them ([E01B 29/10 takes precedence](#))
- E01B 29/14 . . . for lifting sleepers up to the rails ([lifting devices in general B66F](#))
- E01B 29/16 . Transporting, laying, removing, or replacing rails
Moving rails placed on sleepers in the track ([E01B 29/05 takes precedence; moving or tilting heavy loads in general B65G 7/00](#))
- E01B 29/17 . . Lengths of rails assembled into strings, e.g. welded together
- E01B 29/20 . . Moving rails placed on installed sleepers in the plane track
- E01B 29/22 . . Raising rails from sleepers, e.g. for inserting sole-plates ([lifting devices in general B66F](#))
- E01B 29/24 . Fixing or removing detachable fastening means or accessories thereof
Pre-assembling track components by detachable fastening means ([E01B 29/02](#) , [E01B 31/26 take precedence](#))
- E01B 29/26 . . the fastening means being spikes ([E01B 29/16 takes precedence; hand-held tools for nail or staple driving or extracting B25C](#))
- E01B 29/28 . . the fastening means being of screw-and-nut type ([portable apparatus for fixing or removing screws or the like B25B](#))
Apparatus therefor, adapted to additionally drilling holes
- E01B 29/29 . . . for horizontally-arranged fastening elements, e.g. fish-bolts
- E01B 29/32 . Installing or removing track components, not covered by the preceding groups, e.g. sole-plates, rail anchors ([E01B 31/26 takes precedence](#))
- E01B 29/40 . Means or arrangements for temporarily supporting laid tracks, or rails or sleepers in the track ([temporary fishplates E01B 11/18](#))
- E01B 29/42 . Undetachably joining or fastening track components in or on the track, e.g. by welding, by gluing
Pre-assembling track components by gluing
Sealing joints with filling components ([E01B 31/26 takes precedence; independent heating means E01B 31/18](#) ; [welding in general B23K](#) ; [gluing metal parts in general F16B 11/00](#))
- E01B 29/44 . . Methods for effecting joining of rails in the track, e.g. taking account of ambient temperature
- E01B 29/46 . . Devices for holding, positioning, or urging together the rail ends ([adjusting the joint by moving rails E01B 29/20](#))

E01B 31/00

Working rails, sleepers, baseplates, or the like, in or on the line
Machines, tools, or auxiliary devices specially designed therefor (characterised by features independent of use on assembled track [B21](#) , [B23](#) to [B25](#) , [B27](#))

- E01B 31/02 . Working rail or other metal track components on the spot
- E01B 31/04 . . Sectioning or slitting, e.g. by sawing, shearing, flame-cutting
- E01B 31/06 . . Making holes, e.g. by drilling, punching, flame-cutting
- E01B 31/08 . . Bending, e.g. for straightening rails or rail joints (for aligning rail ends to be welded [E01B 29/46](#))
- E01B 31/12 . . Removing metal from rails, rail joints, or baseplates, e.g. for deburring welds, reconditioning worn rails
 - E01B 31/13 . . . by milling
 - E01B 31/15 . . . by planing or filing
 - E01B 31/17 . . . by grinding
 - E01B 31/175 . . . { using grinding belts }
- E01B 31/18 . . Reconditioning or repairing worn or damaged parts on the spot, e.g. applying inlays, building-up rails by welding ([E01B 31/04](#) to [E01B 31/12](#) take precedence)
 Heating or cooling of parts on the spot, e.g. for reducing joint gaps, for hardening rails
- E01B 31/20 . Working or treating non-metal sleepers in or on the line, e.g. marking, creosoting (working metal sleepers [E01B 31/02](#))
- E01B 31/22 . . Cutting or grinding wooden sleepers, e.g. for forming rail seats ([E01B 31/24](#) takes precedence)
 - E01B 31/23 . . . Sectioning (combined with removal of segments from track [E01B 29/11](#))
- E01B 31/24 . . Forming, treating, reconditioning, or cleaning holes in sleepers
 Drilling-templates ([E01B 29/28](#) , [E01B 31/26](#) take precedence)
- E01B 31/26 . . Inserting or removing inserts or fillings for holes in sleepers, e.g. plugs, sleeves
- E01B 31/28 . . Applying or removing anti-splitting or like reinforcing means ([E01B 31/26](#) takes precedence; straps or bands therefor [E01B 3/08](#))

E01B 33/00

Machines or devices for shifting tracks, with or without lifting, e.g. for aligning track, for shifting excavator track (combined with sleeper packing machines [E01B 27/17](#))

- E01B 33/02 . for slewing, i.e. transversely shifting, in steps
- E01B 33/04 . . Manual tools
 Devices not mounted on vehicles
- E01B 33/06 . for slewing in a continuous operation, e.g. for tracks which carry excavators
- E01B 33/08 . . Boom track-slewing machines
- E01B 33/10 . . Bridge track-slewing machines
- E01B 33/12 . . Combined boom and bridge track-slewing machines
- E01B 33/18 . . Details not peculiar to a particular type of machine
- E01B 33/21 . . . Arrangement or construction of rollers moving the rails

- E01B 2202/028 . . . Movement along an inclined surface
- E01B 2202/04 . Nature of the support or bearing
- E01B 2202/042 . . Sliding
- E01B 2202/044 . . Rolling
- E01B 2202/046 . . . with rolls on fixed part
- E01B 2202/048 . . . with rolls on moving part
- E01B 2202/06 . . Use of friction-reducing surfaces
- E01B 2202/08 . Locking devices or mechanisms for inhibiting movement

E01B 2203/00 Devices for working the railway-superstructure

- E01B 2203/01 . with track
- E01B 2203/012 . . present, i.e. in its normal position
- E01B 2203/015 . . present but lifted
- E01B 2203/017 . . removed or not present yet
- E01B 2203/02 . Removing or re-contouring ballast
- E01B 2203/021 . . Blowing
- E01B 2203/022 . . Horizontal chain
- E01B 2203/024 . . Inclined chain
- E01B 2203/025 . . Suction
- E01B 2203/027 . . Sweeping
- E01B 2203/028 . . Alternative ways
- E01B 2203/03 . Displacing or storing ballast
- E01B 2203/032 . . with special use or configuration of conveyor belts
- E01B 2203/034 . . using storing containers
- E01B 2203/036 . . . fixed to vehicle
- E01B 2203/038 . . . detachable from the vehicle
- E01B 2203/04 . Cleaning or reconditioning ballast or ground beneath
- E01B 2203/042 . . in situ, e.g. vacuum-cleaners
- E01B 2203/045 . . the ballast having been taken up
- E01B 2203/047 . . Adding material, e.g. tar, glue, protective layers
- E01B 2203/06 . Placing ballast
- E01B 2203/062 . . New ballast
- E01B 2203/065 . . Re-use of ballast
- E01B 2203/067 . . Special methods for posing or quantifying ballast
- E01B 2203/08 . Levelling ballast or ground beneath
- E01B 2203/083 . . Ploughs

- E01B 2203/086 . . Rotating brooms
- E01B 2203/10 . Track-lifting or-lining devices or methods
- E01B 2203/12 . Tamping devices
- E01B 2203/122 . . for straight track
- E01B 2203/125 . . adapted for switches or crossings
- E01B 2203/127 . . vibrating the track surface
- E01B 2203/14 . Way of locomotion or support
- E01B 2203/141 . . on the track to be treated
- E01B 2203/143 . . on a side-track
- E01B 2203/145 . . on the ballast
- E01B 2203/146 . . using other means than driven wheels as propulsion means
- E01B 2203/148 . . having wheelsets that can be displaced horizontally or vertically
- E01B 2203/15 . Reducing impact of devices on environment
- E01B 2203/16 . Guiding or measuring means, e.g. for alignment, canting, stepwise propagation
- E01B 2203/17 . continually advancing
- E01B 2204/00 Characteristics of the track and its foundations**
- E01B 2204/01 . Elastic layers other than rail-pads, e.g. sleeper-shoes, bituconcrete
- E01B 2204/02 . Ballast bags
- E01B 2204/03 . Injecting, mixing or spraying additives into or onto ballast or underground
- E01B 2204/04 . Direct mechanical or chemical fixing of sleepers onto underground
- E01B 2204/05 . Use of geotextiles
- E01B 2204/06 . Height or lateral adjustment means or positioning means for slabs, sleepers or rails
- E01B 2204/07 . Drainage
- E01B 2204/08 . Deep or vertical foundation
- E01B 2204/09 . Ballastless systems
- E01B 2204/10 . Making longitudinal or transverse sleepers or slabs in situ or embedding them
- E01B 2204/11 . Embedded tracks, using prefab elements or injecting or pouring a curable material
- E01B 2204/12 . Floating rails or sleepers
- E01B 2204/13 . Dowels for slabs, sleepers or rail-fixings

- E01B 2204/14 . Vegetation on or around railway-tracks
- E01B 2204/15 . Layout or geometry of the track
- E01B 2204/16 . Specific granulometry of the ballast
- E01B 2205/00 Electrical insulation of railway track parts**